



VIRGINIA DIVISION OF FORESTRY

DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT



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Plowing Versus Chemical Sod Control

Introduction

Severe sod competition can cause planted seedlings to die and is a common cause of seedling mortality on many abandoned agricultural fields planted to pine seedlings.

There are many methods which may be used to control sod growth so that planted pines might live. In the fall of 1959 the Virginia Division of Forestry tested a chemical and a mechanical method to control sod competition on an abandoned pasture located on the Lynchburg Training School tract in Amherst County. The Lynchburg Training School area was selected because it offered such a rugged test due to an extremely heavy growth of grasses and weeds present. Grasses present included both fescue and orchard grass.

The Study

A randomized block experiment consisting of four blocks and three treatments was used. Within each block the treatment included 50 planted loblolly pine seedlings or a total of 200 seedlings per treatment.

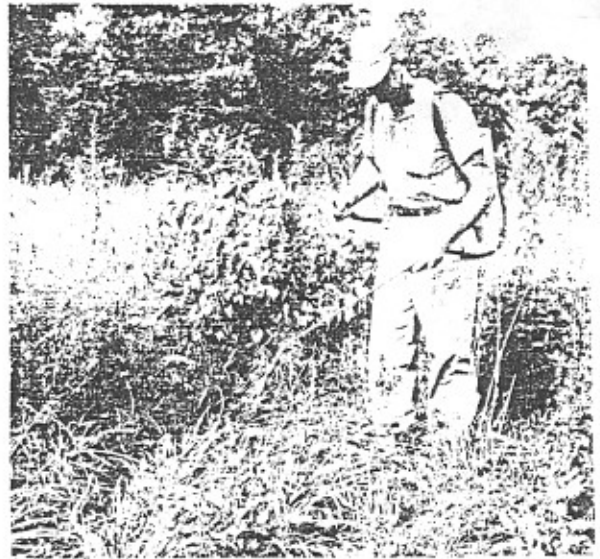
The treatments used were:

1. Check or control - loblolly pine seedlings hand planted within untreated sod areas on March 31, 1960.
2. Mechanical (plowing) - a John Deere tractor and Sieco fire plow prepared plowed lines on September 15, 1959, in which loblolly pine seedlings were hand planted on March 31, 1960.
3. Chemical - a chemical mixture consisting of one pound Radapon ¹/₄ mixed in four gallons water was sprayed covering spots approximately two feet square on September 3, 1959. These sprayed spots were hand planted using loblolly pine seedlings on March 31, 1960.

¹/₄ A Dow Chemical Company product containing dalapon.



Plowed line treatment. Pine seedlings planted within plowed lines.



Chemical spray treatment. Pine seedlings planted within spots prepared by spraying.

Results

Seedling survival data were obtained in November, 1962, thereby allowing three full growing seasons to elapse since time of planting.

The percent survival, planted seedlings by the various treatments is as follows:

	<u>Check</u>	<u>Plowed Lines</u>	<u>Chemical Spraying</u>
Percent survival, planted pines	52.5	65.5	75.0

The treatments ranked in order of effectiveness:

1. Chemical Spraying
2. Plowed Lines
3. Check

The following comparisons were made and the statistical significant differences found are: Chemical Spraying versus Plowed Lines (5 percent), Plowed Lines versus Check (5 percent) and Chemical Spraying versus Check (1 percent). Note: (5 percent) pertains to significant differences and indicates that there is only a 5 percent chance of being wrong or that 5 times out of 100 the results obtained could be different.

Remarks

Costs were not included in this report. However, for the interested reader the chemical treatment cost approximately 2 cents per planting spot treated, exclusive of labor.

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